

CLAIMS

1. A circuit, comprising:

a first in-silicon inductor having a plurality of turns; and

a second in-silicon inductor having a plurality of turns, a portion of the plurality of
5 turns of the second in-silicon inductor being formed between turns of the first in-silicon
inductor,

wherein a differential current flowing through the first in-silicon inductor and the
second in-silicon inductor flows in a same direction in corresponding turns of the first in-
silicon inductor and the second in-silicon inductor.

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2. A circuit as recited in claim 1, wherein a first portion of the first in-silicon
inductor and a first portion of the second in-silicon inductor are formed on a first metal
layer.

15 3. A circuit as recited in claim 2, wherein the first metal layer is a top metal
layer.

4. A circuit as recited in claim 2, wherein a second portion of the first in-silicon inductor and a second portion of the second in-silicon inductor are formed on a second metal layer.

5 5. A circuit as recited in claim 2, wherein a second portion of the first in-silicon inductor and a second portion of the second in-silicon inductor are formed on a second metal layer and a third metal layer.

6. A circuit as recited in claim 5, wherein the second metal layer is below the
10 first metal layer.

7. A circuit as recited in claim 6, wherein the third metal layer is below the second metal layer.

15 8. A method for making an interleaved inductor structure, comprising the operations of:

forming a first in-silicon inductor having a plurality of turns; and

creating a second in-silicon inductor having a plurality of turns, a portion of the plurality of turns of the second in-silicon inductor being formed between turns of the first
20 in-silicon inductor,

wherein a differential current flowing through the first in-silicon inductor and the second in-silicon inductor flows in a same direction in corresponding turns of the first in-silicon inductor and the second in-silicon inductor.

5 9. A method as recited in claim 8, further comprising the operation of forming a first portion of the first in-silicon inductor and a first portion of the second in-silicon inductor on a first metal layer.

10 10. A method as recited in claim 9, wherein the first metal layer is a top metal layer.

15 11. A method as recited in claim 9, further comprising the operation of forming a second portion of the first in-silicon inductor and a second portion of the second in-silicon inductor on a second metal layer.

12. A method as recited in claim 9, further comprising the operation of forming a second portion of the first in-silicon inductor and a second portion of the second in-silicon inductor are formed on a second metal layer and a third metal layer.

13. A method as recited in claim 12, wherein the second metal layer is a below
the first metal layer.

14. A method as recited in claim 13, wherein the third metal layer is below the
5 second metal layer.

15. An interleaved inductor structure, comprising:

a first in-silicon inductor having a plurality of turns, a portion of the first in-
silicon inductor being formed on a first metal layer, the first in-silicon inductor further
10 having a plurality of connecting sections formed on a second metal layer; and

a second in-silicon inductor having a plurality of turns, a portion of the second in-
silicon inductor being formed on the first metal layer, the second in-silicon inductor
further having a plurality of connecting sections formed on the second metal layer, a
portion of the plurality of turns of the second in-silicon inductor being formed between
15 turns of the first in-silicon inductor,

wherein a differential current flowing through the first in-silicon inductor and the
second in-silicon inductor flows in a same direction in corresponding turns of the first in-
silicon inductor and the second in-silicon inductor.

16. A structure as recited in claim 15, wherein each connecting section of the first in-silicon inductor overlaps a portion of the second in-silicon inductor.

17. A structure as recited in claim 16, wherein each connecting section of the
5 second in-silicon inductor overlaps a portion of the first in-silicon inductor.

18. A structure as recited in claim 17, wherein the first metal layer is a top metal layer.

10 19. A structure as recited in claim 16, wherein each connecting section further is formed on a third metal layer.

20. A structure as recited in claim 19, wherein the second metal layer is below the first metal layer.

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21. A structure as recited in claim 16, wherein the third metal layer is below the second metal layer.